

Express Mailing Label No..EV 796 738 819 US

PATENT APPLICATION  
Our Reference No.: 15865.16A.1

**UNITED STATES PATENT APPLICATION**

of

**Chen Zhurong**

**Jin Shenghao**

and

**Ai Wen**

for

**PICNIC TABLE WITH BENCHES**

**WORKMAN NYDEGGER**  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
1000 EAGLE GATE TOWER  
60 EAST SOUTH TEMPLE  
SALT LAKE CITY, UTAH 84111

## Picnic Table with Benches

### CROSS-REFERENCE TO RELATED APPLICATIONS

[001] This application claims priority to and benefit of Chinese Application No. 02255749.0, filed December 4, 2002 and entitled "A Picnic Table with Benches That is Easy to Assemble and Disassemble," which application is incorporated by reference in its entirety.

### BACKGROUND OF THE INVENTION

#### Field of the Invention

[002] The present invention generally relates to furniture and, in particular, to a table with benches.

#### Description of Related Art

[003] Conventional picnic table are typically stationary structures in which a table top is provided with a pair of benches on both sides thereof. The table top may be secured to the group and the benches may be secured to the ground. Alternatively, the table top and benches may be secured to each other. Thus, conventional picnic tables are sometimes impossible to move or extremely bulky to transport.

## BRIEF SUMMARY OF THE INVENTION

[004] A need therefore exists for a picnic table that eliminates the above-described disadvantages and problems.

[005] One aspect of the present invention is a picnic table with benches. The benches are preferably attached to the picnic table by a collapsible structure so that the picnic table is easy to move, transport and store. In addition, the picnic table is preferably easy to assemble.

[006] Another aspect is a picnic table that is adjustable in height. Preferably the center or table portion of the picnic table is adjustable in height.

[007] Still another aspect is a picnic table that includes a tabletop with a top surface, a bottom surface, a first end and an opposing second end. The picnic table may also include a first table leg that is preferably pivotally connected to the first end of the table top and a second table leg that is preferably pivotally connected to the second end of the table top. In addition, the picnic table may include a first seat member with a top surface, a bottom surface, a first end and a second end, and a second seat member with a top surface, a bottom surface, a first end and a second end. The picnic table preferably includes a first seat leg that is pivotally connected to the first end of the first seat member and a second seat leg that is pivotally connected to the first end of the second seat member. The picnic table may further include a first generally C-shaped foot member having an elongated middle portion that extends between a first end and a second end of the foot member. The elongate middle portion of the first foot member may include at least one coupling member, wherein the at least one coupling member is

slidably couplable to the first table leg, the first end is slidably couplable to the first seat leg, and the second end is slidably couplable to the second seat leg.

[008] The picnic table may also includes a third seat leg that is pivotally connected to the second end of the first seat member and a fourth seat leg that is pivotally connected to the second end of the second seat member. Additionally, the picnic table may include a second generally C-shaped foot member with an elongate middle portion that extends between a first end and a second end of the foot member. The elongate middle portion of the second foot member may include at least one coupling member, wherein the at least one coupling member is slidably couplable to the second table leg, the first end is slidably couplable to the third seat leg, and the second end is slidably couplable to the fourth seat leg.

[009] Advantageously the coupling of the first table leg and the at least one coupling member may be configured to be selectively adjustable in length so that the picnic table can be selectively adjustable in height. This allows the height of the center or table portion of the picnic table to be adjusted.

[010] A further aspect is a picnic table with a first frame assembly that is connected to the bottom surface of the table top. The first frame assembly may include a pair of spaced apart side rails and a first rotation shaft connected to the first table leg. The opposing ends of the first rotation shaft are preferably connected to each of the pair of spaced apart side rails. The first frame assembly may also include a second rotation shaft connected to the second table leg. The opposing ends of the second rotation shaft are also preferably connected to each of the pair of spaced apart side rails.

[011] A still further aspect is a picnic table with a first support assembly including a first end that is pivotably connected to the first table leg and a second end that is pivotably connected to the bottom surface of the table top. The picnic table may also include a second support assembly with a first end that is pivotably connected to the second table leg and a second end that is pivotably connected to the bottom surface of the table top. A connecting block may be formed on the bottom surface of the table top, and the second end of the first and second support assemblies may be pivotably connected to the connecting block.

[012] Advantageously, the picnic table may include a first storage area that is formed on the bottom surface of the table top. The first storage area is preferably sized and configured to receive the first table leg when the tabletop is placed in a storage position.

[013] Yet another aspect is a picnic table with second frame assembly that is connected to the bottom surface of the first seat member and the second frame assembly preferably includes a pair of spaced apart side rails. A third rotation shaft may be connected to the first seat leg, and the opposing ends of the third rotation shaft are preferably connected to each of the pair of spaced apart side rails. In addition, a fourth rotation shaft may be connected to the second seat leg, and the opposing ends of the fourth rotation shaft are preferably connected to each of the pair of spaced apart side rails. A third frame assembly may be similarly connected to the bottom surface of the second seat member, if desired. The first seat leg may be at an oblique angle with relation to the second rotation shaft. The first end of the first foot member is preferably

bent at an angle complementary to the oblique angle of the first seat leg and the second rotation shaft.

[014] Advantageously, the picnic table may include a second storage area that is formed on the bottom surface of the first seat member. The second storage area is preferably configured to receive the first seat leg when the seat member is placed in a storage position. In addition, a third storage area is similarly formed on the bottom surface of the second seat member.

[015] Desirably, the picnic table includes a table top that is constructed from blow molded plastic. Additionally, the first seat member and the second seat member of the picnic table are preferably constructed from blow-molded plastic.

[016] Another aspect is a picnic table in which the ends of the foot members are slidably couple to the legs of the seat members. In particular, the connecting tubes at the center of the foot members are preferably slidably couple to the table legs. Desirably, because the connecting tubes and the table legs combine to form an adjustable telescopic assembly, the height of the tabletop can be adjusted according to need during use. In addition, the angle at which the two ends of the foot members bend preferably matches the angle between the seat legs and the rotation shafts. Therefore, after the foot members are slidably couple with the table top and seat members, they can support and maintain the seat members in a horizontal, stable position.

[017] Significantly, because each component of the picnic table may be foldable and slidably coupled, the picnic table can be quickly and easily dismantled into separate units after it has been assembled. Additionally, because the seat legs of the seat members are preferably pivotally connected to the two side rails, the seat legs of the

disassembled seat members can be folded into storage spaces in the underside of the seat members without taking up additional space. Further, the tabletop and table legs preferably have foldable connections which allow the legs to be folded and stored underneath the tabletop. Advantageously, when the picnic table is in the stored position, each component can be stacked to make a package, thereby greatly reducing the amount of space the picnic table must occupy during storage.

[018] These and other objects and features of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

WORKMAN, NYDEGGER & SEELEY  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
1000 EAGLE GATE TOWER  
60 EAST SOUTH TEMPLE  
SALT LAKE CITY UTAH 84111

## BRIEF DESCRIPTION OF THE DRAWINGS

[019] To further clarify the above and other advantages and features of the present invention, a more particular description of the invention will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. It is appreciated that these drawings depict only typical embodiments of the invention and are therefore not to be considered limiting of its scope. The invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

[020] Figure 1 is an upper perspective view of an exemplary embodiment of a picnic table, illustrating the picnic table in a use position.

[021] Figure 2 is a lower perspective view of a portion of the picnic table shown in Figure 1, illustrating a portion of the tabletop and a table leg in an extended position.

[022] Figure 3 is an exploded view of another exemplary embodiment of a picnic table.

[023] Figure 4 is a lower perspective view of still another exemplary embodiment of a picnic table.

[024] Figure 5 is yet another exemplary embodiment of the picnic table, illustrating the picnic table with the benches and legs detached from the center portion of the picnic table.



## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[025] With reference to Figure 1, an exemplary table is shown incorporating features of the present invention. In one aspect of the invention, the table is a picnic table with benches that are easy to assemble and disassemble.

[026] The table includes a tabletop 1 having a pair of table legs 11 connected thereto, two seat members 2, and two foot members 3. Each of the table legs 11 includes a pair of connecting tubes 111. As shown better in Figure 3, each of the seat members 2 includes a pair of seat legs 22 pivotally attached to the underside thereof. The seat legs 22 may have a tubular construction.

[027] The foot members 3 are substantially C-shaped members with an elongate middle portion and two bent end portions. The foot member 3 can be constructed of an elongate tubular member. The middle portion includes two connecting tubes 31 that slidably coupled connect to the connecting tubes 111. The two ends of each foot member 3 are separately and slidably coupled connected with seat legs 22. That is, the same ends of each foot member 3 are connected to a seat leg 22 on the same seat member 2. Stated another way, foot member 3 spans both seat members 2 and the tabletop 1. As such, the foot members 3 provide support to the tables and benches. After the connecting tubes 31 of said foot members 3 slidably coupled connect to the connecting tubes 111, they combine to form an adjustable telescopic tube.

[028] With reference to Figure 2, the underside of tabletop 1 may include lip formed on the outer periphery of the bottom surface and extending outwardly therefrom. A frame assembly can be connected to the lip, the frame assembly including a pair of spaced apart side rails 10. In addition, a pair of table legs 11 and two support

assemblies 13 are connected to the bottom surface of the table top 1. The two connecting tubes 111 of each set of table legs 11 are pivotally connected to the side rails 10 by means of a rotation shaft 112 (Figure 5).

[029] The support assemblies 13 are constructed from three rod elements 131, 132 and 133. One end of the first 131 and second 132 rod elements are separately and pivotally connected to the lower part of the two connecting tubes 111. The other end is separately and pivotally connected to an end of the third rod element 133. A slidable locking ring 12 that can prevent the leg tube from folding is provided at the pivot area of these three rod elements 131, 132 and 133. The other end of the third rod element 133 is pivotally connected by means of a connecting block 14 located at the center of the underside of the tabletop 1.

[030] Seat member 2 includes a lip 20 is formed on the outer periphery of the bottom surface thereof. A frame assembly includes two side rails 21 that are spaced apart and connected to the lip 20 on opposing sides of the seat member 2. A seat leg 22 is disposed at each end of the seat member. The seat leg 22 is pivotally connected with the two side rails 21 by means of a rotation shaft 23. The seat leg 22 and the rotation shaft 23 are at an oblique angle relative to each other. The two ends of the foot member 3 bend inwards. The angle of the bend in the ends of foot member 3 matches the angle between the seat leg 22 and the rotation shaft 23 so that the ends of each foot member 3 is slidably couplable with each seat leg 22.

[031] To assemble the table, the two ends of the support assemblies 3 slidably coupled connect to the seat legs 22 of the seat members 2. The two connecting tubes 31 at their center slidably coupled connect to connecting tubes 111 of the tabletop 1. They

assemble to form an integrated table and benches, with the seat members 2 on both sides of the tabletop 1. As shown in Figure 4, since the connecting tubes 31 and the connecting tubes 111 combine to form an adjustable telescopic tube, the height of the tabletop 1 can be adjusted according to need during use. Spring clips selectively positionable in a plurality of holes formed on the connecting tubes 111 may be used to secure the table at a particular height. Additionally, the angle at which the two ends of the foot members 3 bend inwards matches the angle between the seat legs 22 and the rotation shafts 23. Therefore, after these foot members 3 are slidably coupled joined with the seat legs 22, they can, in addition to supporting the seat members 2, maintain the seat members 2 in a horizontal, stable position.

[032] The table can be easily dismantled into a convenient storage configuration. The seat legs 22 are separated from the ends of the foot members 3. Since the seat legs 22 of the seat members 2 are pivotally connected by rotation shaft 23 to the two side rails 21 on their underside, the seat legs 22 can be folded into storage spaces in the underside of the seat members 2 without taking up additional space.

[033] The foot members 3 are separated from the connecting tubes 111 of table legs 11. Since the table legs 11 are pivotally connected by rotation shaft 112 to the two side rails 10, the table legs 11 can be folded into storage space in the underside of the table top 1 without taking up additional space. The support assemblies 13 assist the table legs 11 in folding.

[034] With reference to Figure 5, when stored, each component can be stacked to make a package. Therefore, the amount of space that the stored table requires is minimal. Furthermore, the table in its stored position is compact and easy to transport.

[035] The table top 1 and seat members 2 may be formed of blow-molded plastic. Thus, the connecting structures can be easily formed during the construction of these members. The table legs 11, seat legs 22, and foot members 3 are preferably hollow, tubular structures to decrease the weight of the table. However, it will be appreciated that they may be solid tubular structures as well.

[036] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.